Department of Agriculture and Fisheries

Sustainable Fisheries Strategy 2017–2027

Rocky Reef Fin Fish Fishery Scoping Study

Queensland Government

This publication has been compiled by Fisheries Queensland, Department of Agriculture and Fisheries.

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Summary

Feature	Details
Species targeted	*Primary target species* – Snapper (*Chrysophrys auratus)*; Pearl perch (*Glaucosoma scapulare*). *Secondary target species* – Cobia or Black kingfish (*Rachycentron canadus*); Yellowtail kingfish (*Seriola Ialandi)*; Amberjack (*S. dumerili)*; Mahi mahi (*Coryphaena hippurus*); Bonito (*Sarda spp.*); Grass emperor (*Lethrinus laticaudis*); Teraglin (*Attactoscion aequidens*).
Fisheries symbols	*Line fishing* L1 – Line fishing south of 24°30´S; L2 & L3 – Line fishing north of 24°30´S.
Legislation	*Fisheries Act 1994; Fisheries Regulation 2008*
Working Group	Yes
Harvest Strategy	No
Gear	The following apparatus are currently used within the Rocky Reef Fin Fish Fishery: • Hook and line apparatus. • Recreational fishers may use hook and line, rods and reels and spearfishing gear (*exc.* Hookah/SCUBA). *A full description of the types of apparatus prescribed for each for each fishery symbol can be found in the Fisheries Regulation 2008.*
Main management methods	*All fishers* • General spatial closures • Minimum and maximum size limits • No-take species • Gear restrictions *Commercial only* • Limited access • Vessel & tender restrictions *Recreational only* • Possession limits
Quota	Nil
Fishing Season	1 January–31 December
Commercial Fishery	Number of line symbols: L1 – 225, L2 – 190, L3 – 931. *Note—numbers correct as of 28 November 2018.*
Total annual harvest by sectors	Commercial: 132t Charter: 61t Recreational: 347 000 fish

	Harvest by Aboriginal peoples and Torres Strait Islander peoples: Unknown *Note—Values based off of 2018 Rocky Reef Fin Fish Fishery summary* (Department of Agriculture and Fisheries, 2018).
GVP	$0.9 million
Stock Status	Snapper – depleted (Fowler *et al.*, 2018) Pearl perch – depleted (Roelofs & Stewart, 2018) Yellowtail kingfish – undefined (Hughes *et al.*, 2018) Mahi mahi – undefined (Larcombe *et al.*, 2018)
Accreditation under the *EPBC Act* (Part 13)	Part 13: Accredited—relates to activities affecting listed species or ecological communities in or on a Commonwealth area. The RRFFF does not have Wildlife Trade Operation approval issued under the *EPBC Act*.

1 Overview

1.1 Commercial fishery

The *Rocky Reef Fin Fish Fishery* (RRFFF) has an estimated Gross Value of Production (GVP) of around $0.9 million and is one of the smallest commercial line fisheries operating in Queensland (Department of Agriculture and Fisheries, 2018). The fishery harvests 13 species or species complexes that are not regulated in either the *Coral Reef Fin Fish Fishery* (CRFFF) or *East Coast Inshore Fin Fish Fishery* (ECIFFF). While the boundary of the Fishery extends along the entire east coast of Queensland (Fig. 1), the majority of the RRFFF catch is reported from central and southern Queensland. The fishery has a comparatively wide depth profile with operators targeting species in waters less than 20m up to and exceeding 200m (Sumpton *et al.*, 2013).

All operators with an L1, L2 or L3 fishery symbol can retain fish species managed as part of the RRFFF. The L1 symbol incorporates tidal waters south of latitude S24°30' to the Queensland / New South Wales boarder and the L2 / L3 fishery symbols cover tidal waters north of S24°30' through to the tip of Cape York (Fig. 1). Provisions governing the use of the L2 and L3 fishery symbols are similar with the key differential being the number of tenders that can be used under each one: L3 = one tender, L2 = four tenders. While the L3 is the most numerous line fishing symbol, almost 40% are attached to licences not affiliated with line fishing *i.e.* trawl licences (*pers. comm.* S. Breen). This combined with tender restrictions placed on the L3 fishing symbol, suggests a higher proportion of the RRFFF catch comes from fishers operating under the L1 and L2 fishery symbols.

In addition to the line fishery, a small quantity of RRFFF species are caught by net operations targeting fin fish species in the ECIFFF. This is permitted under the current management regime as RRFFF species are not regulated by gear type (*i.e.* line fishing only) or species quotas. Accordingly, ECIFFF operators can retain RRFFF species if they are caught as part of their day to day operations. When compared to the line caught fish, net caught species make up a smaller component of the RRFFF catch. For reference, the net-caught catch for 2017 included 1.9t of snapper, 8.5t of bonito, 4.1t of yellowtail kingfish and >1t (combined) of unspecified kingfish, cobia (black kingfish), grass emperor, bonito and samson fish (**Appendix A**).

As the above species are not identified as regulated species in the ECIFFF, they are not included in the catch records for this fishery. This component of the catch though will be taken into consideration as part of broader discussions surrounding the RRFFF, despite it being a line-dominated fishery.

1.2 Non-commercial fishing

Recreational fishers target a large number of RRFFF species with snapper, cobia (black kingfish), pearl perch and amberjack all featuring prominently in the *Queensland Statewide Recreational Fishing Survey* (Webley *et al.*, 2015). This survey estimated that over 200 000 snapper (high confidence estimate) and around 25 000 pearl perch (medium confidence estimate) were caught by recreational fishers (**Appendix B**). The popularity of recreational fishing is reflected in data for the charter fishery where a combined total of 105 licence holders retained more than 46t of RRFFF species during the 2017 period. Over half of this catch consisted of snapper (21t over 2382 days fished), pearl perch (11t over 1476 days fished) and teraglin (11t over 847 days fished) (Department of Agriculture and Fisheries, 2019).

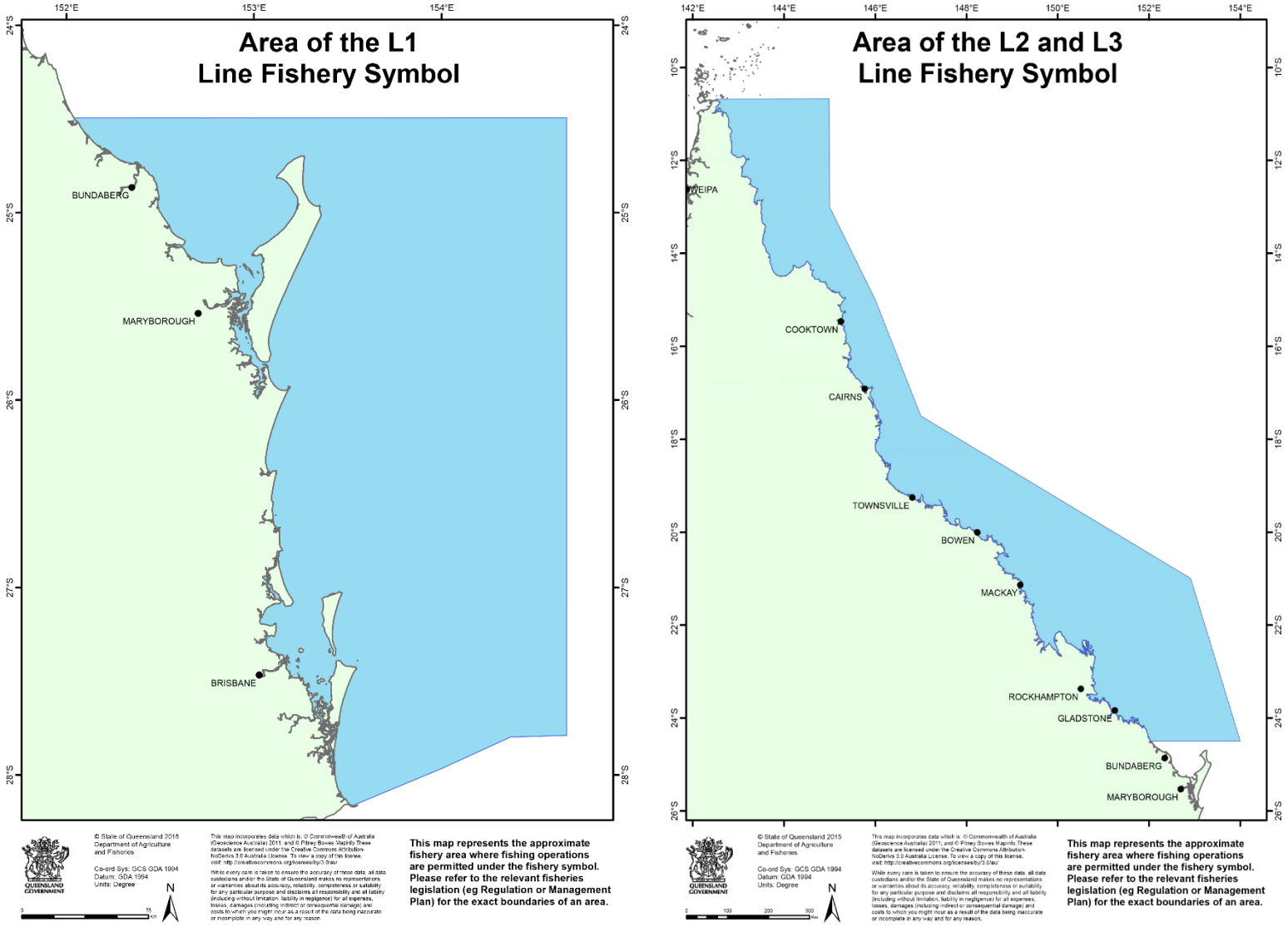

Figure 1. *Fishing area boundaries for the L1, L2 and L3 fishery symbols.*

In addition to the recreational/charter fishing sectors, Aboriginal peoples and Torres Strait Islander peoples will harvest RRFFF species. Catch and effort for this fishing sector remains the least understood. However, DAF anticipates that this sector has comparatively low levels of effort with fishing patterns aligning closely with the recreational fishing sector.

Additional information on the commercial, recreational and charter fishing sectors can be obtained through QFish, Queensland's publicly accessible data mining site (http://qfish.fisheries.qld.gov.au/).

2 Legislation & Advisory Bodies

The RRFFF is managed in accordance with the broader objectives of the *Fisheries Act 1994* and the *Fisheries Regulation 2008*. A RRFFF Fisheries Working Group has been established as part of the *Queensland Sustainable Fisheries Strategy 2017–2027* and includes a range of stakeholders from the scientific community, management agencies, and the commercial and recreational fishing sectors. This working group will be responsible for discussing management reform initiatives for the fishery, evaluating the suitability and applicability of the current management regime and potential alternatives.

3 Key Management Controls

The commercial fishing sector of the RRFFF is largely managed through input controls with limited licensing, gear restrictions, vessel restrictions and spatial closures all used in this fishery. Primary vessel length is restricted to a maximum of 20m and tenders are limited by length (7m), number and proximity to the primary vessel *i.e.* they must stay within 5 nautical miles from the primary boat if not on the same reef. Gear is restricted to three fishing lines at a time with no more than six hooks overall. When fishing in the *Great Barrier Reef Marine Park*, operators will also be subject to provisions regulating the use of marine resources within this area.

The fishing season for the commercial fishery runs from 1 January to 31 December each year, although catch and effort tends to peak in the winter months. Unlike the CRFFF, species targeted in the RRFFF are not managed under species-specific or competitive quotas. However, minimum size limits are applied to the recreational, charter and commercial fishing sectors. No-take limits are also in place for seven reef fin fish species: barramundi cod (*Cromileptes altivelis*), potato cod (*Epinephelus tukula*), Queensland groper (*E. lanceolatus*), chinaman fish (*Symphorus nematophorus*), humphead Maori wrasse (*Cheilinus undulates*), paddletail (*Lutjanus gibbus*) and red bass (*L. bohar*).

Commercial and charter fishers are required to report catch and effort to Fisheries Queensland through compulsory logbooks. Queensland does not have a recreational fishing licence and monitoring of this sector is principally conducted through a long-term monitoring program and the *Queensland Statewide Recreational Fishing Survey* (Webley *et al.*, 2015).

Refer to the *Fisheries Regulation 2008* (available at: https://www.legislation.qld.gov.au/) for a full account of the provisions used to manage the RRFFF including those governing the use of L1, L2 and L3 fishery symbols.

4 Assessment History

The RRFFF has not been the subject of a detailed ERA in the past decade (Kingston & Ryan, 2004); although stock assessments have been completed for pearl perch and snapper (Sumpton *et al.*, 2017; Wortmann *et al.*, 2018). Both of these reports raised concerns regarding the status of regional stocks and the levels of fishing mortality experienced by these species.

A number of the RRFFF species have been included in the National *Status of Australian Fish Stocks* (SAFS) and Queensland Stock Status processes. Status assessments for snapper and pearl perch reflect the available research with regional (Queensland) stocks classified as depleted (Fowler *et al.*, 2018; Roelofs & Stewart, 2018). Stock status assessments for the remaining RRFFF species ranged from undefined to sustainably fished (**Appendix C**).

Full accounts of both stock assessments have been made available at: http://era.daf.qld.gov.au/. Additional information on the stock status assessments of each species can be obtained through the SAFS website (http://fish.gov.au/) and through the DAF *Sustainability Reporting* website (available at: https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-compliance/data/sustainability-reporting/stock-status-assessment).

5 Licence & Symbol Summary

5.1 Commercial fishing authorities / fishery symbols

Access to Queensland's commercial fisheries is managed using fishery symbols. These symbols, in effect, define what gear can be used in each fishery (*e.g.* N = Net, L = line, T = trawl) and the area of operation. While operators can have multiple fishery symbols attached to their licence (*e.g.* N1, N2 and L1 or a L1 and T1), they can only use one fishery symbol at a time. The notable exceptions to this are a) the crab (C1) fishery symbol that can be used in conjunction with a line (L) and net (N) fishery symbol, and b) fishing symbols related to quota such as those used in the CRFFF. In each fishery, the total number of symbols represents the number of fishers that could potentially access the fishery at any one time. This differs from data on the number of 'active' licences that represents the number of operators that have accessed the fishery over a 12-month period.

5.2 Trends in commercial fishing authorities

Licencing arrangements for the RRFFF have evolved through time, with the area of operation and permitted activities becoming more prescriptive. The L1, L2 and L3 symbols were introduced in 1993 and superseded the more generic Line (L) fishing symbol. Licencing data has shown that the number of L1, L2 and L3 symbols has declined since 1999. This decline was more pronounced in the L1 symbol where total numbers reduced by around 86% over the 1999 to 2017 period (Table 1; Fig. 2a). This is in contrast to the number of L2 and L3 fishery symbols, which declined by 21% and 36% (respectively) over the same period. This difference is largely attributed to a 2008/09 latent effort review that removed the majority of the L1 symbols from the system (Fig. 2a). The L2 and L3 were not subject to the same review process.

When compared to symbols, the number of operators accessing or actively fishing in the fishery (*i.e.* the number of active licences) is much smaller. Since 1993, the number of operators reporting catch in the RRFFF has fluctuated between 233 and 370. These fluctuations are smaller in the post-2010 period where the number of active licences ranged from 256 to 286 (Table 1, Fig. 2a). This decline

can be partly attributed to the latent effort review of the L1 fishery and the removal of licences that accessed the RRFFF infrequently or licences whose catch history did not meet the prescribed criteria (Table 1, Fig. 2a) (Department of Agriculture Fisheries and Forestry, 2012).

Table 1. *An overview of the total number of line (L) fishery symbols that can potentially access the RRFFF, and the total number of active licences across all three symbols. Licence holders wanting to access the RRFFF must hold a L1, L2, or L3 fishery symbol.*

Year	No. Symbols			Total Active
	L1	L2	L3	
1993	664	85	607	244
1994	774	99	705	233
1995	915	122	825	258
1996	1080	144	979	331
1997	1340	189	1200	370
1998	1558	226	1381	354
1999	1643	241	1452	334
2000	1634	239	1446	317
2001	1549	235	1360	324
2002	1540	235	1351	341
2003	1535	235	1345	332
2004	1527	235	1335	255
2005	1514	233	1302	246
2006	1440	216	1228	264
2007	1399	210	1201	305
2008	1376	209	1200	322
2009	374	204	1109	324
2010	241	204	1102	283
2011	243	204	1100	286
2012	241	204	1088	256
2013	238	202	1057	270
2014	238	202	1043	285
2015	232	195	994	286
2016	231	192	969	273
2017	226	190	936	274

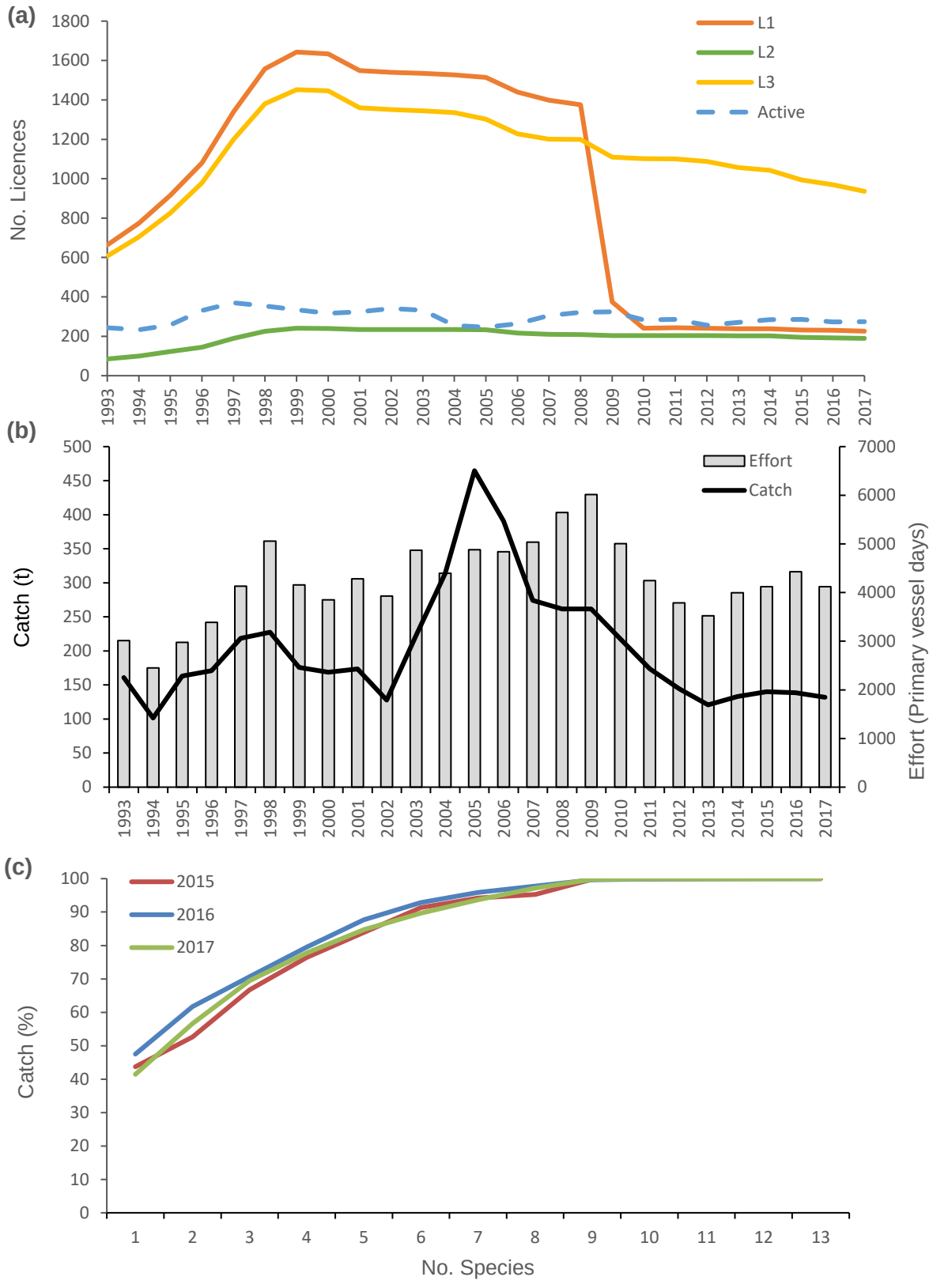

Figure 2. *Licence, catch and effort summaries for the RRFFF: (a) total number of line (L1, L2, L3) fishery symbols and total number of licences active in the fishery, (b) catch and effort comparisons from 1993–2017 (inclusive) and (c) cumulative catch contribution based on the number of species.*

6 Commercial Catch & Effort

6.1 Effort

Monitoring systems used by DAF only account for reported catch and therefore cannot fully take into account the inexact nature of line fishing. If for example, an operator was targeting red throat emperor in the CRFFF but only caught snapper, catch and effort would be reported against the RRFFF not the CRFFF. Similarly, if an operator retains a snapper and a trevally in a single fishing event then they would technically be fishing in both the RRFFF and the ECIFFF. The primary reason for this is that monitoring systems used by Queensland use retained catch to differentiate between the three line fisheries (RRFFF, CRFFF and ECIFFF).

The above points are important as effort data submitted to DAF may not reflect the intentions of a fisher at that point in time and or will provide a truncated assessment of the current fishing environment. While noting these caveats, effort data for the fishery provides a broader overview of how the fishery operates through time and insight on the direct fishing pressures exerted on a species or species complex. To this extent, this data allows inferences to be drawn with respect to effort fluctuations through time and changing fishing behaviours. This is considered to be of particular importance in the RRFFF where changing fishing behaviours are more pronounced due to the smaller number of target species.

Annual effort (primary vessel days) for the RRFFF shows a degree of variability (Table 2, Fig. 2b) but can be divided into three broader periods. From 1993 through to 2009 effort increased from an historical low of 2449 primary vessel days (1994) to a peak of 6013 (2009). After which, effort declined markedly (approximately 40%) to around 3500 primary vessel days in 2013, before stabilising at around 4000 primary vessel days in the post-2013 period (Table 2, Fig. 2b). When compared to other fisheries including the CRFFF, effort trends for the RRFFF appear to have a weaker relationship (overall) with the number of active licences and total catch (Fig. 2a–b).

As the species caught in the RRFFF are not quota managed, there is capacity within the fishery for effort to shift amongst species as market trends or abundance varies. Historically, the majority of effort used in the RRFFF has focused on the two main species: pearl perch and snapper (Table 2; Fig. 3a). Since 2007, effort patterns have diversified to include several other species, with grass emperor experiencing one of the more pronounced increases in fishing effort (Table 2; Fig. 3a). While not universal, these increases in effort have been sustained through time for a number of species.

6.2 Effort distribution

Effort distribution maps for the RRFFF show that effort is distributed along the entire Queensland east coast with a large proportion of the effort located in central and south east Queensland (**Appendix D**). Effort hotspots do occur in fishing areas north of Mackay, however the area from south Fraser Island to the NSW border appears to be the most heavily fished section of coastline (**Appendix D**). This region roughly correlates with the prescribed fishing area of the L1 fishery symbol (Fig. 1).

Table 2. *An overview of the total yearly commercial catch (t), effort (primary vessel days) and non-standardised catch per unit effort (CPUE, kg/primary vessel day) for the five main species retained for sale in the RRFFF.*

Year	Effort	Catch	CPUE (kg/primary vessel day)				
			Snapper	Pearl perch	Grass emperor	Cobia	Amberjack
1993	3014	161	45.5	23.9	27.5	22.1	37.3
1994	2449	101	34.8	18.4	3.3	21.9	21.1
1995	2974	163	42.5	32.0	5.1	20.2	23.1
1996	3386	171	40.7	29.3	8.8	21.5	33.0
1997	4129	218	41.9	34.4	10.6	23.2	32.1
1998	5057	228	38.5	24.8	12.1	21.4	27.1
1999	4156	176	33.5	27.0	17.9	21.9	19.3
2000	3849	169	32.7	32.2	19.1	24.1	22.3
2001	4284	174	32.0	25.1	14.3	29.9	35.6
2002	3926	128	27.2	20.7	14.2	21.3	38.8
2003	4870	223	32.7	30.0	13.4	34.0	25.0
2004	4395	314	49.0	34.3	6.7	24.3	32.3
2005	4878	465	76.1	42.0	7.9	28.6	34.7
2006	4839	391	57.4	32.5	9.4	38.0	27.2
2007	5039	274	43.8	24.5	8.7	27.9	24.9
2008	5646	262	38.5	22.0	9.6	27.1	19.7
2009	6013	262	34.8	24.0	10.6	22.9	18.4
2010	5007	217	35.5	21.2	11.5	21.5	20.4
2011	4247	174	30.9	18.1	12.9	19.5	22.2
2012	3790	144	31.6	20.5	10.4	20.4	18.1
2013	3521	121	34.1	18.1	8.6	13.9	17.1
2014	3994	133	31.7	17.9	9.4	14.9	15.1
2015	4119	140	34.8	17.1	8.8	14.4	16.6
2016	4426	139	32.8	15.8	8.6	13.0	18.0
2017	4121	132	29.2	14.9	10.2	18.2	16.0

6.3 Catch

L1, or L2 and L3 licence holders are permitted to take any non-quota or non-regulated fin fish species in the prescribed areas, excluding no-take species. In the RRFFF, operators predominantly target snapper (*Chrysophrys auratus*) and pearl perch (*Glaucosoma scapulare*) with cobia (*Rachycentron canadus*)[1], yellowtail kingfish (*Seriola Ialandi*), amberjack (*Seriola dumerili*), grass emperor (*Lethrinus laticaudis*), samsonfish (*Seriola hippos*), teraglin (*Atractoscion aequidens*), mahi mahi (*Coryphaena hippurus*), sea sweep (Sc*orpis aequipinnis*), bonito (*Sarda spp*), and frypan bream (*Argyrops spinifer*) retained in smaller quantities.

Catch trends for the entire fishery are provided in Table 2 with a more comprehensive overview of the species catch composition provided in Table 3. At a whole of fishery level, total catch has undergone several peaks and troughs since 1993. The most notable of these was in in 2005 when catch peaked at 465t before declining sharply over an eight year period (121t in 2012, 74% reduction; Table 2; Fig. 2b). This trend can be largely attributed to a progressive decline in the health of snapper and pearl perch stocks (Sumpton *et al.*, 2017; Wortmann *et al.*, 2018) and a corresponding decrease in the total annual catch of these species (Table 2; Fig. 3b).

6.4 Species composition

Of the 13 species targeted by RRFFF operators, five species (snapper, pearl perch, grass emperor, cobia and amberjack) make up the majority (85%) of the catch (Table 3; Fig. 2c, 3b). Of these five, snapper dominates the RRFFF catch, doubling that reported for cobia and pearl perch (Table 2; Table 3; Fig. 3b). There has been a dramatic decline in catch for both snapper and pearl perch, with a corresponding increase in the catch of secondary species (Table 3; Fig. 3b). This was particularly evident for grass emperor where the annual reported catch increased from average of 2.2t (range 1–8t) from 1993 to 2007 (inclusive) to 15t (range 11–24) in the post 2008 period (Table 3; Fig. 3b).

Figure 3(c) focuses specifically on the five primary species (snapper, pearl perch, grass emperor, cobia, and amberjack) and provides insight into how the non-standardised CPUE has changed through time. In all but one instance, grass emperor, the CPUE trended downwards from 2004 or 2005 (Fig. 3c). It is important to note though that non-standardised or 'raw' CPUE is limited in that it is rarely proportional to the abundance of the species over a whole exploitation history or the entire geographical range (Maunder *et al.*, 2006). Further, numerous factors can affect catch rates within a particular fishery and can bias CPUE as an index of abundance. Thus, consideration needs to be given to how confounding factors may influence non-standardised CPUEs.

Standardised catch rates considers the effects of the above factors and the dynamics of a fishery or species including changes to management (*e.g.* minimum legal size limits). The difficulty being that standardised catch rates are not available for the majority of species. However, standardised catch rates are available for both pearl perch and snapper. These were compiled as part of a broader stock assessment (Sumpton *et al.*, 2017; Wortmann *et al.*, 2018) and have been provided in **Appendix E**. For both species, the observed trends in the standardised CPUE broadly aligned with the raw data presented in Fig. 3(c).

[1] *Also referred to as black kingfish*

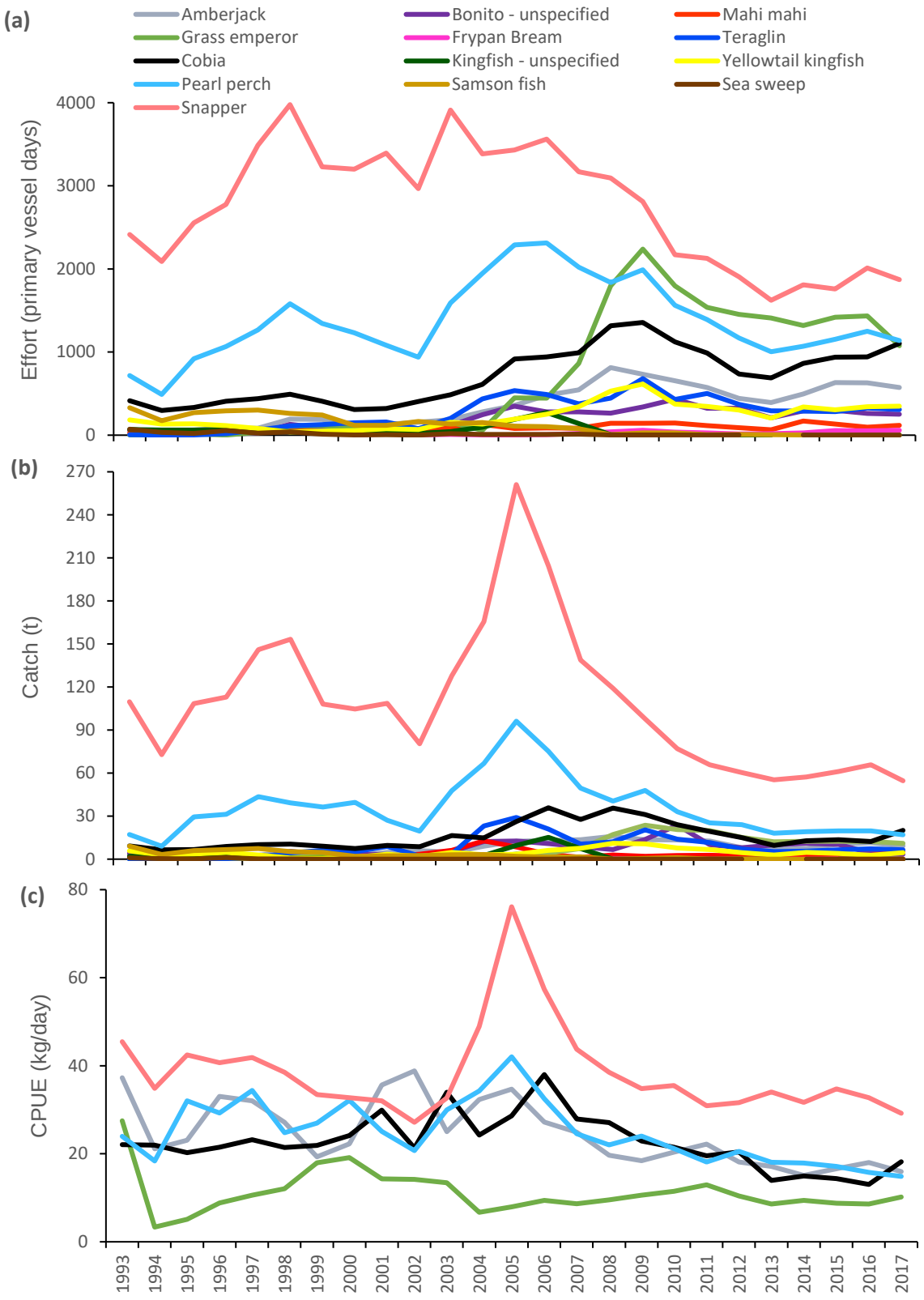

Figure 3. *Trends for individual species caught in the RRFFF: (a) Effort (primary vessel days); (b) Catch (t) and; (c) non-standardised catch per unit effort (CPUE) for the five key species retained in the fishery.*

Table 3. *Yearly catch (t) composition by species for the RRFFF for 1993–2017. Catch does not include harvest recorded by net.*

Species	Year																								
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Snapper	110	73	108	113	146	153	108	105	109	81	128	166	261	204	139	119	98	77	66	60	55	57	61	66	55
Cobia	9	7	7	9	10	11	9	8	10	9	17	15	26	36	28	36	31	24	19	15	10	13	14	12	20
Pearl perch	17	9	30	31	44	39	36	40	27	19	48	67	96	75	50	40	48	33	25	24	18	19	20	20	17
Grass emperor	<1	<1	<1	<1	<1	1	2	2	2	1	2	<1	4	4	8	17	24	21	20	15	12	12	13	12	11
Amberjack	3	1	2	3	3	5	4	2	5	6	5	9	13	13	14	16	14	13	13	8	7	8	11	11	9
Teraglin	<1	<1	<1	<1	1	4	6	5	9	2	4	23	29	21	10	12	20	14	12	7	5	6	6	7	7
Mahi mahi	1	<1	1	<1	1	1	1	<1	2	3	6	13	9	3	1	3	2	3	3	2	1	2	2	3	5
Yellowtail kingfish	6	3	4	5	3	1	1	1	4	2	5	3	3	6	8	11	11	8	7	5	3	5	4	3	5
Bonito (unsp.)	4	4	5	<1	<1	5	3	3	3	2	5	12	13	11	9	7	14	24	10	8	10	11	10	4	3
Kingfish (unsp.)	2	2	2	2	3	1	1	1	1	<1	1	3	10	15	8	<1	<1	<1	<1	<1	<1	-	<1	<1	<1
Frypan bream	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Samson fish	9	3	6	7	7	5	5	2	2	3	3	3	2	1	2	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Sea sweep	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1

6.5 Bycatch

Bycatch is predominantly comprised of reef quota species. These include red emperor, red throat emperor and groupers. A small number of sharks including gummy, sandbar whaler and silvertip, were also identified as bycatch in the observer program data collected from 2006–2010 (Department of Employment Economic Development and Innovation, 2011).

While noting the above, there is limited information on bycatch quantities and compositions in the RRFFF. This deficiency would be partly due to the fact that some non-target species can be retained as part of other fisheries *e.g.* non-quota species in the ECIFFF or species from the CRFFF if the operator also holds quota.

6.6 Species of Conservation Interest

Logbook data reveals few interactions with species of conservation interest (SOCI) in the RRFFF. In Queensland a SOCI interaction is defined as any physical contact with a protected species, including interactions with fishing gear and vessel collisions. The logged interactions since 2003 are limited to cetaceans, turtles, two sea birds and 'no-take' fin fish species (Table 4). No interactions have been reported as fatal (**Appendix F**), but humpback whales, loggerhead turtles and teleosts have all been recorded as injured. An overview of the RRFFF interactions with protected species is provided in Table 4 with **Appendix F** providing a more comprehensive overview of the logged interactions and the release fate of the animal.

Table 4. *Summary of interactions reported in the Species of Conservation Interest (SOCI) logbook by fishers operating in the RRFFF. Data includes all reports and encompasses handline, trolling and line fishing operations.*

Species complex	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Whales	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	0	**4**
Dolphin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Marine turtles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	**3**
Sharks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Sawfishes & Rays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Crocodiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Seabirds	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
Sea snakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Teleosts	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**1**
Dugong	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Syngnathids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

7 Key References and Links

Department of Agriculture and Fisheries (2018). *Queensland Fisheries Summary*. Queensland Government. Brisbane.

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8 Appendix

- Appendix A – *Yearly catch (t) composition for all RRFFF catch retained by net fishers operating in the East Coast Inshore Fin Fish Fishery (1993–2017 inclusive).*
- Appendix B – *Summary of the 2013 Statewide Recreational Fishing Survey data for key RRFFF species.*
- Appendix C – *Summary of the species assessed as part of the QLD stock status and SAFS processes.*
- Appendix D – *Commercial effort distribution for the 2015, 2016 and 2017 fishing seasons.*
- Appendix E – *Standardised catch rates for pearl perch and snapper.*
- Appendix F – *Detailed overview of the SOCI interactions reported from the RRFFF.*

APPENDIX A – *Yearly catch (t) composition for all RRFFF catch retained by **net** fishers operating in the East Coast Inshore Fin Fish Fishery (1993–2017).*

	Year																								
Species	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Perch - pearl	<0.1	0.1			0.2	<0.1				0.1		0.1	0.1	0.4			<0.1								
Kingfish - black	0.4	0.9	0.8	1.2	1.1	0.6	0.5	0.4	1.2	0.8	0.6	1.7	1.1	1.3	1.3	2.8	1.3	0.3	1.2	0.4	0.7	3.0	0.3	0.5	0.3
Kingfish - yellowtail	0.5	1.1	1.8	0.9	1.4	2.3			0.4			<0.1	<0.1	0.1	0.1	0.3	3.5	0.6	0.2	<0.1	0.1	0.1	1.0	1.2	4.1
Kingfish - unspecified	<0.1	0.4	0.1	0.3	0.1	1.0	0.1	0.1	<0.1	0.2	0.1	0.1	<0.1	0.1		0.4	0.1	0.1		<0.1	<0.1	0.1	<0.1	0.2	<0.1
Samson fish	0.1		0.3	0.4	0.1	0.4	0.2	0.1	<1	0.1	0.2	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1		<0.1	<0.1			<0.1	0.1
Amberjack			<0.1			<0.1	<0.1	1.3	0.7	0.4	<0.1	1.1	0.3	6.2	<0.1	<0.1		<0.1			<0.1				
Dolphin fish	0.1		<0.1			0.2														<0.1					
Emperor - grass						<0.1	0.2					<0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	0.4
Snapper (squire)	1.3	0.6	1.1	3.9	2.5	2.0	1.9	1.3	2.9	0.8	2.1	1.9	0.1	7.9	13.8	5.9	2.7	2.3	1.3	2.4	7.2	4.9	1.2	6.3	1.9
Bonito - unspecified	4.4	8.3	11.9	6.6	2.1	9.5	1.0	2.7	3.3	6.4	14.4	11.6	15.2	26.5	25.7	9.3	7.8	15.9	1.3	1.4	3.5	4.5	3.3	1.4	8.5
Jew fish - teraglin							<0.1	0.2			0.5	0.1		0.1	0.3		0.6	<0.1	<0.1					<0.1	<0.1
Sea sweep							0.1					<0.1													

APPENDIX B – *Summary of the 2013/14 Statewide Recreational Fishing Survey data for key RRFFF species.*

The recreational catch and harvest taken from the 2013/14 *Statewide Recreational Fishing Survey*. Fish without values either had no information collected or had unreliable relative standard error (RSE) values. For reference, estimates with an RSE value >50% are considered to be unreliable for general purposes (Webley *et al.*, 2015).

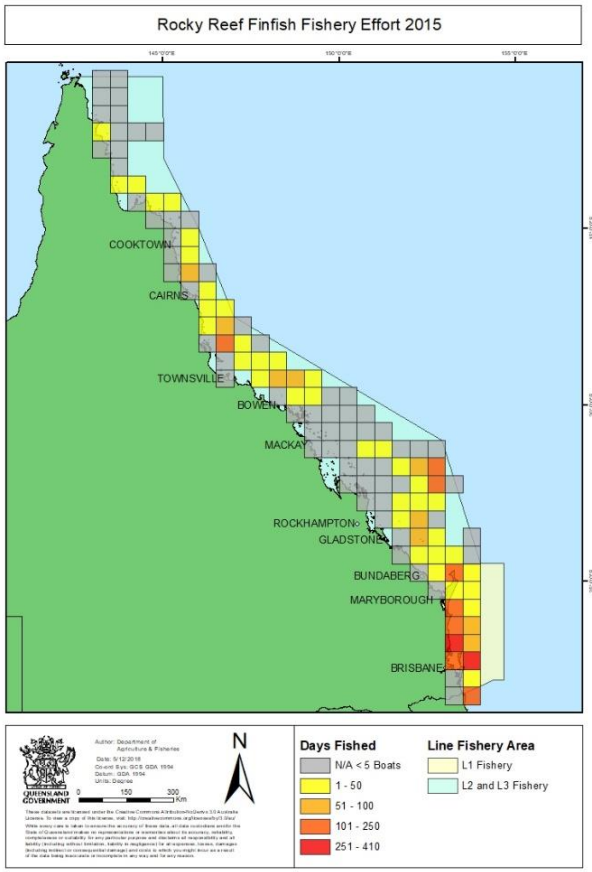
Species	Catch	Confidence	Harvest	Confidence
Snapper	203,000	High	56,000	High
Pearl perch	25,000	Medium	11,000	Medium
Grass emperor	72,000	High	34,000	High
Cobia / Black Kingfish	7,000	Medium	5,000	Medium
Teraglin	-	-	11,000	Medium
Yellowtail kingfish	5,000	Medium	-	-
Amberjack	-	-	-	-
Bonito	-	-	-	-
Mahi mahi	-	-	-	-
Samson fish	-	-	-	-
Frypan bream	-	-	-	-
Sea sweep	-	-	-	-
Kingfish unspecified	-	-	-	-

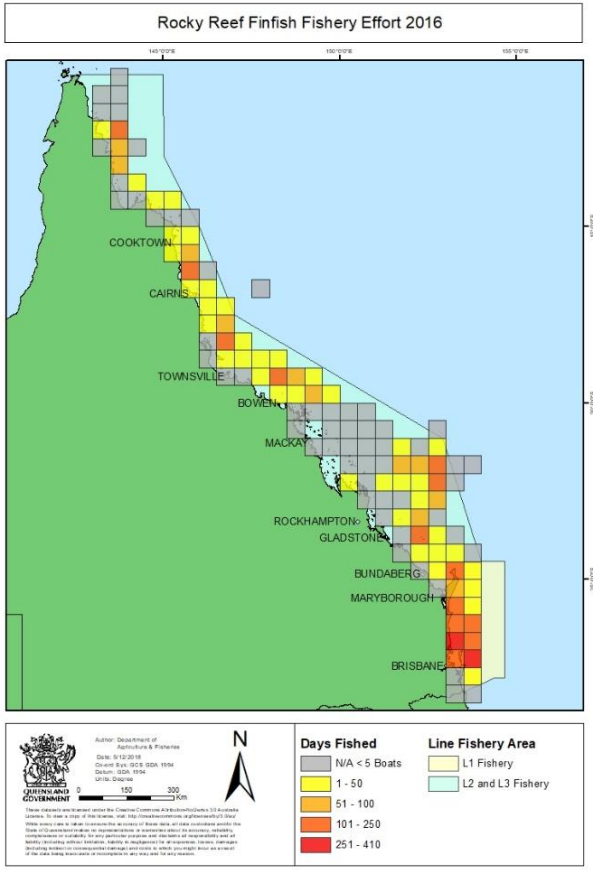
APPENDIX C – *Summary of the species assessed as part of the QLD stock status and SAFS processes.*

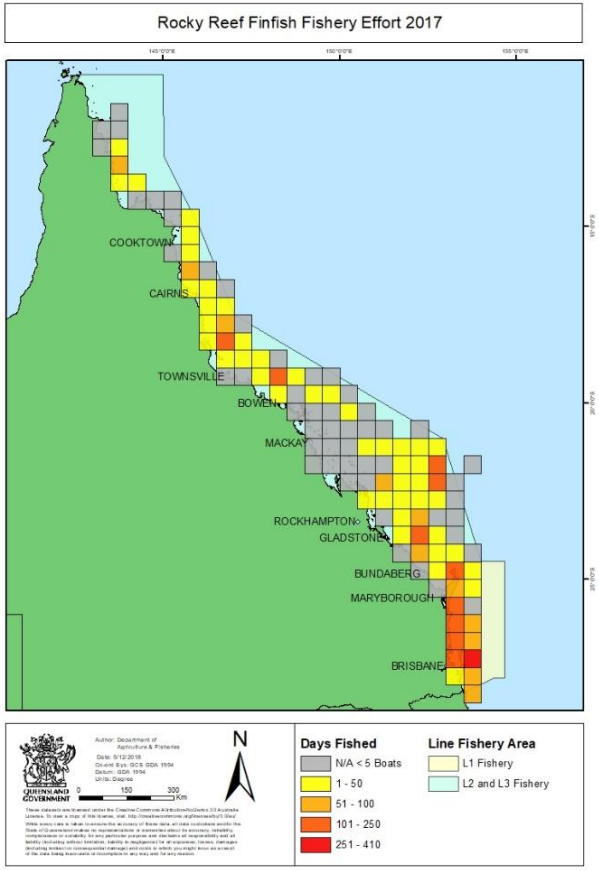
Summary of the species retained in the Rocky Reef Fin Fish Fishery (RRFFF) that assessed as part of the National Status of Australian Fish Stocks (SAFS) and Queensland Stock Status processes.

Species	SAFS Stock name	2015 QLD status	2016 SAFS status	2017 QLD status	2018 SAFS status
Snapper (*Chrysophrys auratus* or *Pagrus auratus*)	East Coast Queensland	Overfished	Undefined	Overfished	Depleted
Yellowtail kingfish *(Seriola lalandi)*	East Coast Queensland	Not Assessed	Undefined	Not Assessed	Undefined
Pearl perch *(Glaucosoma scapulare)*	East Coast Queensland	Transitional-depleting	Transitional-depleting	Transitional-depleting	Depleted
Mahi mahi (*Coryphaena hippurus*)	East Coast Queensland	Sustainable	Not Assessed	Not Assessed	Undefined
Cobia / Black Kingfish (*Rachycentron canadum*)	East Coast Queensland	Sustainable	Not Assessed	Undefined	Not Assessed
Grass emperor (sweetlip) (*Lethrinus laticaudis*)	East Coast Queensland	Undefined	Not Assessed	Undefined	Not Assessed
Amberjack (*Seriola dumerilli*)	East Coast Queensland	Not Assessed	Not Assessed	Not Assessed	Not Assessed

APPENDIX D – *Commercial effort distribution for the 2015, 2016 and 2017 fishing seasons.*

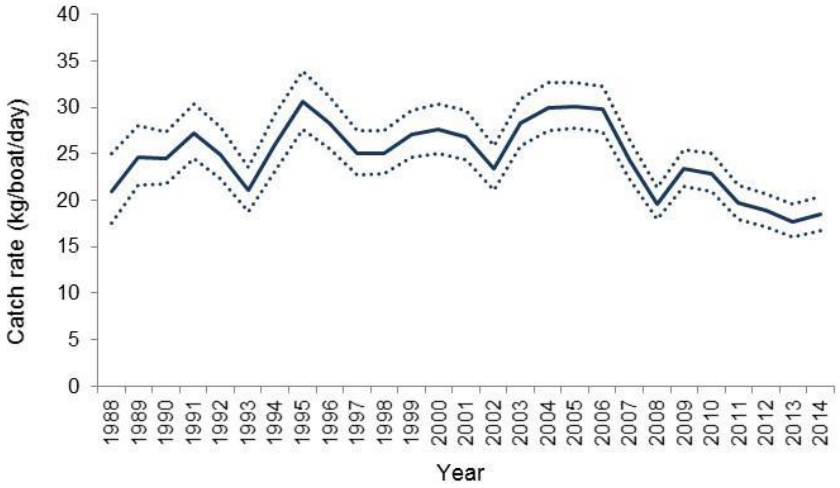




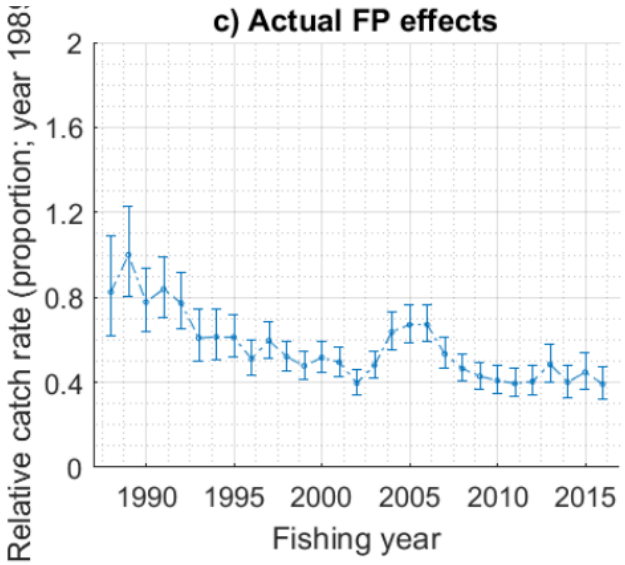


APPENDIX E – a) *Standardised catch rate for pearl perch (Sumpton et al., 2017) and b) standardised mean catch rates for snapper adjusted for actual fishing power (FP) (Wortmann et al., 2018).*

a)



b)



APPENDIX F – *Detailed overview of the SOCI interactions.*

Interactions reported in the Species of Conservation Interest (SOCI) logbook by fishers operating in the RRFFF. Data includes all reports and encompasses dropline (demersal longline), handline, and line fishing operations.

	2003				2004	2005	2006	2007				2008				2009				2010
Species	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**N/A**	**N/A**	**N/A**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**N/A**
Whales					No Reports	No Reports	No Reports													No Reports
Humpback whale								2	1	0	1									
Marine turtle																				
Loggerhead																				
Teleosts																				
Barramundi cod																				
Seabirds																				
Pelican												2	2	0	0					
Non SOCI reports	12	12	0	0																

APPENDIX 6 cont.

	2011				2012	2013	2014	2015				2016	2017				2018			
Species	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**N/A**	**N/A**	**N/A**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**N/A**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**	**Total**	**Disc. Alive**	**Disc. Dead**	**Other**
Whales					No Reports	No Reports	No Reports					No Reports								
Humpback whale	1	1	0	0									1	1	0	0				
Marine turtles																				
Loggerhead																	3	1	0	2
Teleosts																				
Barramundi cod								1	0	0	1									
Seabirds																				
Pelican																				
Non-SOCI reports																				